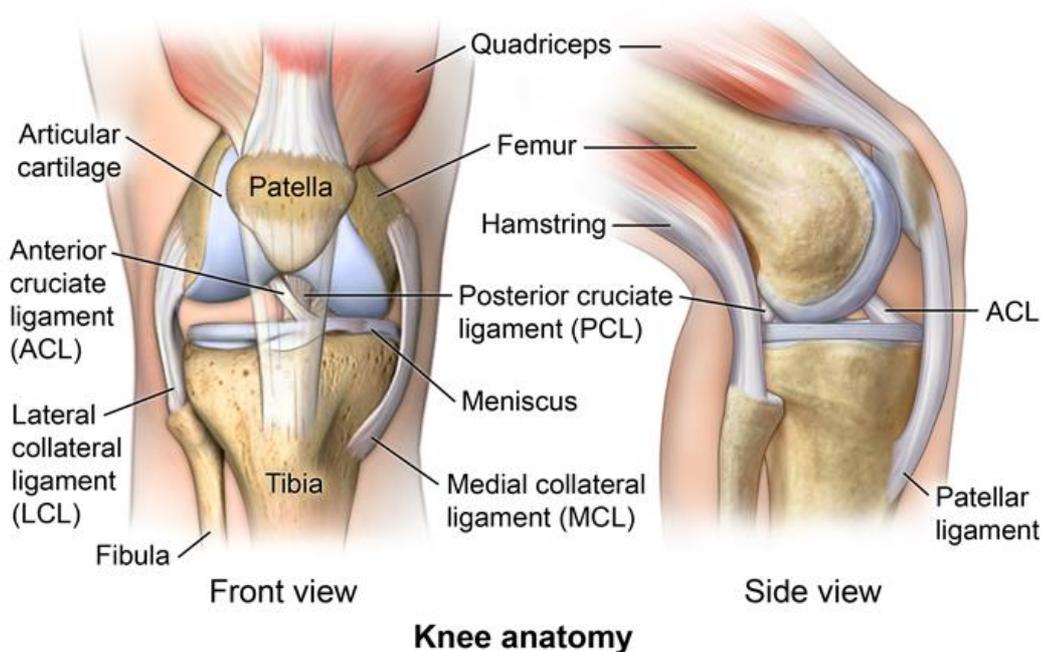


INFORMATION FOR PATIENTS, PARENTS, GUARDIANS AND CARERS

## Anterior knee pain in children and adolescents

This leaflet aims to provide you with information regarding anterior knee pain in children and adolescents (a common knee complaint where pain is felt in or around the knee), including its common causes and treatments.

The knee is a complex joint formed of the lower part of the femur (large thigh bone), the upper part of the shin bone (tibia) the small fibula bone (on the outside of the shin bone) and the kneecap (patella). Various muscles, tendons and ligaments stabilise the knee and help it function, usually without any problems.

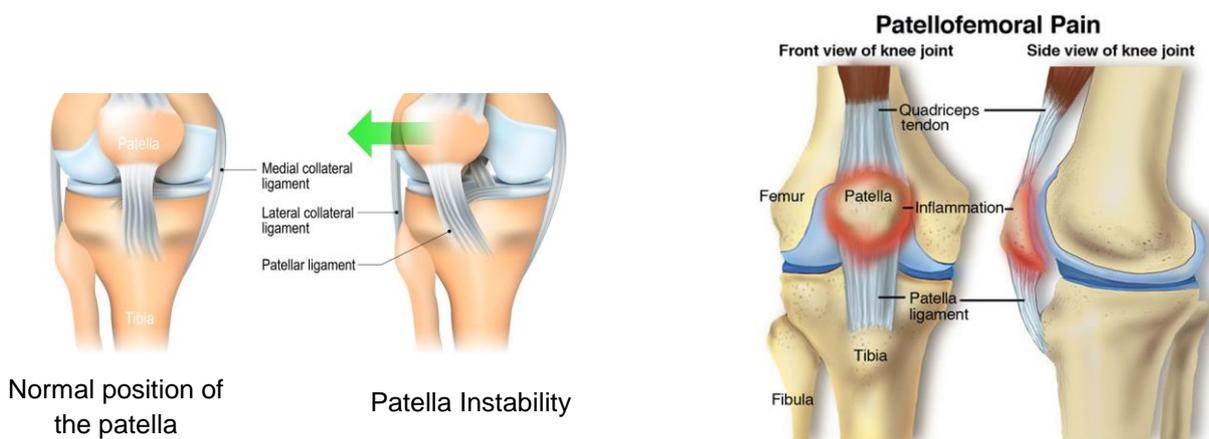


Knee pain is a common symptom at all ages and unfortunately we sometimes experience knee pain for no apparent reason. Anterior knee pain is very common in children and adolescents, especially during pubertal growth spurts as this leads to a muscle imbalance. Tightness and weakness in the muscles at the front and back (quadriceps and hamstrings) of your thigh can develop which can cause a **temporary** misalignment of your patella and irritation to the structures around your knee.

## Common cause of knee pain in children and adolescents

Your patella (kneecap) rests in a groove at the end of the thigh bone (femur). When the knee bends and straightens, the patella moves up and down within this groove which is supported and controlled solely by the muscles at the front of your thigh (quadriceps).

Periods of growth can act like a trauma which can cause inhibition of the muscles around your knee. Your bones grow significantly quicker than your muscles, and this can result in an imbalance leading to instability. Sometimes the patella can slide too far to one side or the other (subluxation) due to the tightness and weakness of the muscles. This can also lead to clicking and grinding sensations within the knee.



## What are the signs and symptoms?



### PAIN

Usually a dull ache which can occur for no apparent reason, becoming gradually worse under and around your knee cap with increased activity such as sitting, walking, running, jumping or going up and down stairs.



### SWELLING

Irritation of the structures around the knee due to imbalance of the muscles can often cause swelling, but this should come and go.



### WEAKNESS

The knee may feel unstable and/or give way



### CLICKING

You may hear cracking, clicking or grinding noises especially when you move your knee, but this is normal and often nothing to worry about.



### PSEUDO-LOCKING

Sometimes it may feel like your knee locks in place; this is usually due to muscle spasm because of the imbalance.

## What can you do to help yourself?

Anterior knee pain in children and adolescents that is related to pubertal growth is extremely treatable with physiotherapy. You may find initially that the stretches and strengthening exercises provided will cause you discomfort, but the more regularly you can carry these out, the better you will feel.

Your exercises will need to become part of your daily routine to see the benefits and will need to be carried out long term, especially throughout periods of growth. Your physiotherapist will provide you with an individual exercise programme after an assessment. As these exercises get easier, your physiotherapist will change and adapt these to make them more challenging. This will gradually improve the strength and balance between the muscles around your knee. When you start the new exercise programme, you will feel discomfort again until your body has had time to adapt. This cycle will continue until you have achieved your goals. In general, Level 1 exercises consist of seated and lying exercises, such as straight leg raise and bridging, along with hamstring and calf stretches. Level 2 will progress to include some weight bearing exercises such as squats and Level 3 will progress to dynamic exercises looking at return to sport/hobbies.

When you have an injury or a new period of growth, the knee pain may return. When this happens, some useful advice to follow is PEACE & LOVE. Following a growth spurt, which has led to your knee becoming painful again, it is important to return to your initial Level 1 physiotherapy exercises. If you keep working on the higher level exercises, this will continue to aggravate your symptoms. Once your knee pain has settled, you can gradually work back through the levels of exercises provided by your physiotherapist.

- P**  **PROTECTION**  
Avoid activities and movements that increase pain during the first few days after injury.
- E**  **ELEVATION**  
Elevate the injured limb higher than the heart as often as possible.
- A**  **AVOID ANTI-INFLAMMATORIES**  
Avoid taking anti-inflammatory medications as they reduce tissue healing. Avoid icing.
- C**  **COMPRESSION**  
Use elastic bandage or taping to reduce swelling.
- E**  **EDUCATION**  
Your body knows best. Avoid unnecessary passive treatments and medical investigations and let nature play its role.
- &**
- L**  **LOAD**  
Let pain guide your gradual return to normal activities. Your body will tell you when it's safe to increase load.
- O**  **OPTIMISM**  
Condition your brain for optimal recovery by being confident and positive.
- V**  **VASCULARISATION**  
Choose pain-free cardiovascular activities to increase blood flow to repairing tissues.
- E**  **EXERCISE**  
Restore mobility, strength and proprioception by adopting an active approach to recovery.

**Physiotherapy is necessary treatment for anterior knee pain in children and adolescents. Less than 1% of children/adolescents with anterior knee pain ever go on to have surgery, but it is important for them to have had physiotherapy before they are even considered for surgery.**

**If your symptoms significantly worsen, and you are unable to manage them, your parent/guardian/carer will need to contact your GP or physiotherapist for advice.**

### **Contact details**

Therapy Services Department  
Clinic 10  
King's Mill Hospital  
Mansfield Road  
Sutton in Ashfield  
Notts  
NG17 4JL

Telephone: 01623 672384, or 01623 622515, extension 4157 or 07787273070.

### **Further sources of information**

NHS Choices: [www.nhs.uk/conditions](http://www.nhs.uk/conditions)

Our website: [www.sfh-tr.nhs.uk](http://www.sfh-tr.nhs.uk)

### **Patient Experience Team (PET)**

PET is available to help with any of your compliments, concerns or complaints, and will ensure a prompt and efficient service.

King's Mill Hospital: 01623 672222

Newark Hospital: 01636 685692

Email: [sfh-tr.PET@nhs.net](mailto:sfh-tr.PET@nhs.net)

If you need this information in a different language or format, please contact the PET (as above).

This document is intended for information purposes only and should not replace advice that your relevant health professional would give you.

External websites may be referred to in specific cases. Any external websites are provided for your information and convenience. We cannot accept responsibility for the information found on them.

If you require a full list of references for this leaflet, please email [sfh-tr.patientinformation@nhs.net](mailto:sfh-tr.patientinformation@nhs.net) or telephone 01623 622515, extension 6927.

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